

=> d his

(FILE 'HOME' ENTERED AT 16:30:17 ON 08 JUN 2006)

FILE 'CAPLUS' ENTERED AT 16:30:35 ON 08 JUN 2006
L1 5 S PATRICIA A?/AU
L2 0 S FAWCEFF P?/AU
L3 75 S FAWCETT P?/AU
L4 4 S L3 AND PY=1973

FILE 'STNGUIDE' ENTERED AT 16:32:09 ON 08 JUN 2006

FILE 'CAPLUS' ENTERED AT 16:33:15 ON 08 JUN 2006

FILE 'STNGUIDE' ENTERED AT 16:33:16 ON 08 JUN 2006
L5 0 S " PROTOPLAST AND SPHEROPLAST"/CT
L6 0 S "PROTOPLAST AND SPHEROPLAST"/CT

FILE 'CAPLUS' ENTERED AT 16:33:58 ON 08 JUN 2006
L7 7436 S "PROTOPLAST AND SPHEROPLAST"/CT
L8 460 S CEPHALOSPORIUM ACREMONIUM/CT
L9 2264 PENICILLIUM CHRYSOGENUM/CT
L10 8 S L8(L)PROTOPLAST
L11 16 S L9(L)PROTOPLAST
L12 22 S L7 AND (L8-9)
L13 25 S L10-11 OR L12
L14 2 S L13 AND ?LACTAM?

FILE 'REGISTRY' ENTERED AT 16:38:13 ON 08 JUN 2006
L15 3 S 10209-11-7 OR 35353-34-5 OR 847567-43-5
L16 1 S L15 AND C18 H20 N2 O6 S/MF
L17 1 S 35353-34-5
L18 1 S L15 NOT L16-17

FILE 'CAPLUS' ENTERED AT 16:40:07 ON 08 JUN 2006
L19 1 S L16
L20 9 S L17
L21 1 S L20 AND L7
L22 1 S L20 AND L8-9
L23 1 S L20 AND (FUSION OR PROTOPLAST)
L24 1 S L21-23
L25 8 S L20 AND PY<2004
L26 128 S L18
L27 2 S L26 AND L7-9
L28 3020 S PENICILLIUM CHRYSOGENUM
L29 1 S L28 AND 48271

FILE 'STNGUIDE' ENTERED AT 16:48:23 ON 08 JUN 2006

FILE 'CAPLUS' ENTERED AT 16:50:06 ON 08 JUN 2006
L30 568 S CEPHALOSPORIUM ACREMONIUM
L31 0 S L30 AND 31697
L32 1 S 31697
L33 0 S L30 AND CCRC
L34 0 S L30 AND DEPOSIT?
L35 2 S L26 AND (L28 OR L30)
L36 136 S L15
L37 1 S L36 AND PROTOPLAST
L38 2 S L36 AND L8-9
L39 60 S EELANDER R?/AU
L40 0 S L39 AND PROTOPLAST
L41 0 S L39 AND FUSION
L42 52 S PROTOPLAST FUSION AND INDUSTRIAL
L43 219 S EELANDER?/AU
L44 0 S L43 AND L42
L45 0 S L42 AND 1982
L46 0 S L42 AND L39
L47 1 S L42 AND L28
L48 0 S L30 AND L42
L49 70 S L30 AND L28
L50 2 S L49 AND FUSION
L51 4 S L49 AND PROTO?

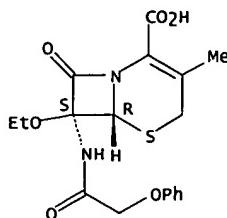
FILE 'STNGUIDE' ENTERED AT 17:02:59 ON 08 JUN 2006

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=> d 1-3

L15 ANSWER 1 OF 3 REGISTRY COPYRIGHT 2006 ACS on STN
RN 847567-43-5 REGISTRY
ED Entered STN: 30 Mar 2005
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid,
7-ethoxy-3-methyl-8-oxo-7-[(phenoxyacetyl)amino]-, (6R,7S)- (9CI) (CA
INDEX NAME)
OTHER NAMES:
CN 3-3A2
FS STEREOSEARCH
MF C18 H20 N2 O6 S
SR CA
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL

Absolute stereochemistry.

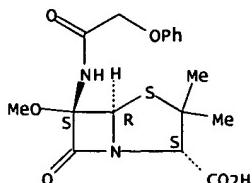


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 2 OF 3 REGISTRY COPYRIGHT 2006 ACS on STN
RN 35353-34-5 REGISTRY
ED Entered STN: 16 Nov 1984
CN 4-Thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, 6-methoxy-3,3-
dimethyl-7-oxo-6-[(phenoxyacetyl)amino]-, (2S,5R,6S)- (9CI) (CA INDEX
NAME)
OTHER CA INDEX NAMES:
CN 4-Thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, 6-methoxy-3,3-
dimethyl-7-oxo-6-[(phenoxyacetyl)amino]-, [2S-
(2 α ,5 α ,6 α)]-
OTHER NAMES:
CN 6-Methoxypenicillin V
CN A 3-2
FS STEREOSEARCH
MF C17 H20 N2 O6 S
CI COM
LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT, IFICDB, IFIPAT, IFIUDB,
TOXCENTER, USPATFULL
(*File contains numerically searchable property data)

Absolute stereochemistry.



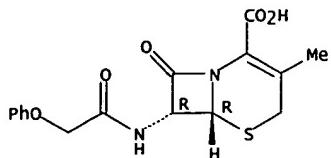
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

9 REFERENCES IN FILE CA (1907 TO DATE)
9 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 3 OF 3 REGISTRY COPYRIGHT 2006 ACS on STN
RN 10209-11-7 REGISTRY
ED Entered STN: 16 Nov 1984
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid,
3-methyl-8-oxo-7-[(phenoxyacetamido)amino]-, (6R,7R)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid,
3-methyl-8-oxo-7-(2-phenoxyacetamido)- (7CI, 8CI)
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid,
3-methyl-8-oxo-7-[(phenoxyacetyl)amino]-, (6R-trans)-
OTHER NAMES:
CN 3-Methyl-7-(2-phenoxyacetamido)-3-cephem-4-carboxylic acid
CN 3-Methyl-7 β -(phenoxyacetamido)-3-cephem-4-carboxylic acid

CN 7-Phenoxyacetamido-3-methyl-3-cephem-4-carboxylic acid
CN 7-Phenoxyacetamidoacetoxycephalosporanic acid
CN 7-Phenoxyacetamidodesacetoxycephalosporanic acid
CN M 4
CN V-Deacetoxycephalosporanic acid
FS STEREOSEARCH
DR 856655-86-2
MF C16 H16 N2 O5 S
CI COM
LC STN Files: BEILSTEIN*, BIOSIS, CA, CAOLD, CAPLUS, CASREACT,
CHEMINFORMRX, IFICDB, IFIPAT, IFIUDB, SPECINFO, TOXCENTER, USPATFULL
(*File contains numerically searchable property data)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

128 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
128 REFERENCES IN FILE CAPLUS (1907 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

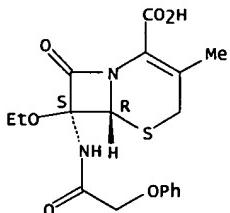
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=> d que
L15      3 SEA FILE=REGISTRY ABB=ON PLU=ON 10209-11-7 OR 35353-34-5 OR
          847567-43-5
L16      1 SEA FILE=REGISTRY ABB=ON PLU=ON L15 AND C18 H20 N2 O6 S/MF
L19      1 SEA FILE=CAPLUS ABB=ON PLU=ON L16

=> d bib abs hitstr

L19  ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
AN  2005:220011 CAPLUS
DN  142:296774
TI  Method for producing novel beta-lactam antibiotic from protoplast fusion
strain
IN  Chen, Chin-Chu; Feng, Ying-Shih; Chyau, Charng-Cherng; Chen, Ching-Nung;
Huang, Shih-Jeng; Chen, Yen-Lien; Tseng, Hung-Ping; Chung, Wei-Hui; Chen,
Yi-Hsuan
PA  Taiwan
SO  U.S. Pat. Appl. Publ., 19 pp.
CODEN: USXXCO
DT  Patent
LA  English
FAN.CNT 1
PATENT NO.      KIND   DATE      APPLICATION NO.      DATE
-----  -----  -----  -----
PI  US 2005054031      A1    20050310      US 2003-657199      20030909
PRAI US 2003-657199      20030909
OS  CASREACT 142:296774
AB  The present invention provides a method for producing novel β-lactam
antibiotics from a protoplast fusion strain. The method is to
fermentatively culture the protoplast fusion strain of Penicillium
chrysogenum and Cephalosporium acremonium. The fermentation filtrate is
isolated, lyophilized, and extracted by acetone or acetone/MeOH. The extract is
concentrated by decompression, and then analyzed by preparation type HPLC to isolate
the active antibiotic compound
IT  847567-43-5P, Antibiotic 3-3-A-2
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); NPO
(Natural product occurrence); PRP (Properties); PUR (Purification or
recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(producing novel β-lactam antibiotic from protoplast fusion
strain)
RN  847567-43-5 CAPLUS
CN  5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid,
7-ethoxy-3-methyl-8-oxo-7-[(phenoxyacetyl)amino]-, (6R,7S)- (9CI) (CA
INDEX NAME)
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Absolute stereochemistry.



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L7 7436 SEA FILE=CAPLUS ABB=ON PLU=ON "PROTOPLAST AND SPHEROPLAST"/CT

L8 460 SEA FILE=CAPLUS ABB=ON PLU=ON CEPHALOSPORIUM ACREMONIUM/CT
L9 2264 SEA FILE=CAPLUS ABB=ON PLU=ON PENICILLIUM CHRYSOGENUM/CT
L17 1 SEA FILE=REGISTRY ABB=ON PLU=ON 35353-34-5
L20 9 SEA FILE=CAPLUS ABB=ON PLU=ON L17
L21 1 SEA FILE=CAPLUS ABB=ON PLU=ON L20 AND L7
L22 1 SEA FILE=CAPLUS ABB=ON PLU=ON L20 AND (L8 OR L9)
L23 1 SEA FILE=CAPLUS ABB=ON PLU=ON L20 AND (FUSION OR PROTOPLAST)

L24 1 SEA FILE=CAPLUS ABB=ON PLU=ON (L21 OR L22 OR L23)

=> d bib ab

L24 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:220011 CAPLUS
DN 142:296774
TI Method for producing novel beta-lactam antibiotic from protoplast fusion strain
IN Chen, Chin-Chu; Feng, Ying-Shih; Chyau, Charng-Cherng; Chen, Ching-Nung;
Huang, Shih-Jeng; Chen, Yen-Lien; Tseng, Hung-Ping; Chung, Wei-Hui; Chen,
Yi-Hsuan
PA Taiwan
SO U.S. Pat. Appl. Publ., 19 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

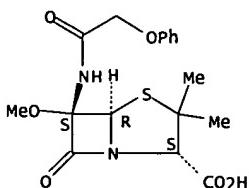
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2005054031	A1	20050310	US 2003-657199	20030909
PRAI US 2003-657199		20030909		
OS CASREACT 142:296774				

AB The present invention provides a method for producing novel β -lactam antibiotics from a **protoplast fusion strain**. The method is to fermentatively culture the **protoplast fusion strain** of *Penicillium chrysogenum* and *Cephalosporium acremonium*. The fermentation filtrate is isolated, lyophilized, and extracted by acetone or acetone/MeOH. The extract is concentrated by decompression, and then analyzed by preparation type HPLC to isolate the active antibiotic compound

=> d hitstr

L24 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
IT 35353-34-5P, Antibiotic A-3-2
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); NPO (Natural product occurrence); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation) (producing novel β -lactam antibiotic from **protoplast fusion strain**)
RN 35353-34-5 CAPLUS
CN 4-Thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, 6-methoxy-3,3-dimethyl-7-oxo-6-[(phenoxyacetyl)amino]-, (2S,5R,6S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



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=> d bib ab 1-8

L25 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1981:407272 CAPLUS

DN 95:7272

TI Penicillin 1,1-dioxides and their use in pharmaceutical compositions
IN Niemers, Ekkehard; Koenig, Hans Bodo; Schroek, Wilfried; Metzger, Karl
PA Bayer A.-G., Fed. Rep. Ger.
SO Ger. Offen., 36 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2925963	A1	19810122	DE 1979-2925963	19790627 <-
	US 4344955	A	19820817	US 1980-158975	19800612 <-
	GB 2053216	A	19810204	GB 1980-20647	19800624 <-
	GB 2053216	B2	19830420		
	JP 56007790	A2	19810127	JP 1980-85255	19800625 <-
PRAI	DE 1979-2925963	A	19790627		

OS MARPAT 95:7272

AB Penicillin dioxides I ($R = H$, aliphatic, alkoxy, aryl, aryloxy, heterocyclic, acyl, amino; $R1 = H$, acyl, alkylsulfonyl, arylsulfonyl, alkyl; $R2 = H$, alkoxy; $R3 = H$, ester group) were prepared for used as β -lactamase inhibitors and bactericides. Thus 6-amino-6-methoxy penicillanic acid was acylated with (EtO)₃CCOOOCMe₃ and oxidized with H₂O₂ to give I [$R = C(OEt)$ ₃; $R1 = H$, $R2 = OMe$, $R3 = Na$] which at 1 μ g/mL was bactericidal against all *Staphylococcus aureus*.

L25 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1978:406318 CAPLUS

DN 89:6318

TI Derivatives of 6-aminopenicillanic acid

IN Christensen, Burton G.; Cama, Lovji D.

PA Merck and Co., Inc., USA

SO U.S., 11 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4071529	A	19780131	US 1974-495010	19740805 <-
	US 4035359	A	19770712	US 1975-599266	19750725 <-
	US 4154845	A	19790515	US 1977-831465	19770908 <-
PRAI	US 1971-149349	A2	19710602		
	US 1974-495010	A3	19740805		

AB Penicillins I ($n = 0, 1$; $R = H$, lower alkyl, Me₃Si, PhCH₂, methoxybenzyl, C₂H₂Cl₃; $R1 =$ lower alkylthio) and their pharmaceutically acceptable salts were prepared by 4 methods. Thus, benzyl 6-aminopenicillanate-4-MeC₆H₄SO₃H was diazotized in CH₂Cl₂ with NaNO₂ and 4-MeC₆H₄SO₃H to give benzyl 6-diazopenicillanate, which was treated with NET₃.HN₃ and BrN₃ at 5°; the resulting benzyl 6 β -azido-6-bromopenicillanate was methoxylated with AgBF₄ in MeOH, and the benzyl 6 β -azido-6-methoxy penicillanate thus obtained hydrogenated in Ac₂O over Pt oxide. Debenzylation of the resulting benzyl 6 β -acetamido-6-methoxy penicillanate with H₂ over Pd/C in dioxane-H₂O-MeOH gave 6 β -acetamido-6-methoxy penicillanic acid.

L25 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1977:527029 CAPLUS

DN 87:127029

TI Theoretical studies on β -lactam antibiotics. I. Conformational similarity of penicillins and cephalosporins to X-D-alanyl-D-alanine and correlation of their structure with activity

AU Virudachalam, R.; Rao, V. S. R.

CS Mol. Biophys. Unit, Indian Inst. Sci., Bangalore, India

SO International Journal of Peptide & Protein Research (1977),

10(1), 51-9

CODEN: IJPPC3; ISSN: 0367-8377

DT Journal

LA English

AB The substrate analog hypothesis proposed for the mechanism of the action of penicillins and cephalosporins is examined by stereochem. criteria. These β -lactam antibiotics assume conformations similar to X-D-alanyl-D-alanine due to the presence of the lactam ring. The model proposed for the activity of these antibiotics differs considerably from the earlier models, mainly in ϕ .2 rotational angle which determines the conformation of the aminoacyl group. The inactivity of C6 or C7 epimers and the effect of various substitutions at 6 α or 7 α and C2 positions of penicillins and cephalosporins on the biol. activity are explained.

L25 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1977:468340 CAPLUS

DN 87:68340

TI 2-(4-Methoxyxazolidinone-4-yl)thiazolidine t-butyl esters

IN Ashbrook, Charles W.; Kaiser, Gary V.; Koppel, Gary A.

PA Eli Lilly and Co., USA

SO U.S., 6 pp.

CODEN: USXXAM

DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4012410	A	19770315	US 1975-568070	19750414 <-
PRAI	US 1972-222294	A3	19720131		

AB Thiazolidine I was prepared by methoxylating penicillin V, esterifying II ($R = Me$, $R_1 = H$), hydrolyzing II ($R = Me$, $R_1 = CMe_3$), and cyclizing II ($R = H$, $R_1 = CMe_3$) with dicyclohexylcarbodiimide. Treatment of I with HCO_2H gave 6-methoxy-6-phenoxyacetamidopenicillanic acid.

L25 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1975:86275 CAPLUS
DN 82:86275
TI 6 α -Substituted penicillins
AU Lo, Young S.; Sheehan, John C.
CS Dep. Chem., Massachusetts Inst. Technol., Cambridge, MA, USA
SO Journal of Organic Chemistry (1975), 40(2), 191-2
CODEN: JOCEAH; ISSN: 0022-3263

DT Journal
LA English
AB 6 α -Methoxy-6 β -phenoxyacetamidopenicillanic acid (I, $R = MeO$) and 6 α -cyano-6 β -phenoxyacetamidopenicillanic acid (I, $R = CN$) were prepared from benzyl 6-oxopenicillanate. Both compds. showed weak antibacterial activities.

L25 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1974:514876 CAPLUS
DN 81:114876
TI Effect of 6 α -substitution in penicillins and 7 α -substitution in cephalosporins upon β -lactam reactivity
AU Indelicato, Joseph M.; Wilham, William L.
CS Lilly Res. Lab., Eli Lilly and Co., Indianapolis, IN, USA
SO Journal of Medicinal Chemistry (1974), 17(5), 528-9
CODEN: JMCMAR; ISSN: 0022-2623
DT Journal
LA English
AB The rates of base hydrolysis of a series of α -substituted penicillins and cephalosporins were determined by constant pH titration or measured spectrophotometrically. The results showed 6 α -substitution in penicillins gave compds. with less reactive β -lactams than the parent compound, due to steric rather than polar effects. The 7 α -substitution in cephalosporins had no pronounced effect on β -lactam reactivity. The relation of chemical reactivity to antibacterial activity was discussed.

L25 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1973:38529 CAPLUS
DN 78:38529
TI Biochemical and microbiological studies on 6-substituted penicillins
AU Indelicato, Joseph M.; Spitzer, Wayne A.; Koppel, Gary A.
CS Lilly Res. Lab., Eli Lilly & Company, Indianapolis, IN, USA
SO Journal of Antibiotics (1972), 25(10), 627-8
CODEN: JANTAJ; ISSN: 0021-8820
DT Journal
LA English
AB The min. inhibitory concentration for Escherichia coli and the concentration required for 50% inhibition of transpeptidase [9059-29-4] increased when the 6-positions of penicillin V [87-08-1] and penicillin G [61-33-6] were substituted by CH_3 -, CH_3O -, or CH_3S - groups, and by CH_3 -, CH_3O -, or C_2H_5O - groups, resp. These substitutions also decreased the reactivity of the β -lactam at pH 10.0 in all cases tested. A steric effect rather than a polar effect may account for the decreased reactivity.

L25 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1972:99649 CAPLUS
DN 76:99649
TI Antibiotic 6 α -substituted-6-aminopenicillanic acids and their derivatives
IN Christensen, Burton G.; Cama, Lovji, D.
PA Merck and Co., Inc.
SO Ger. Offen., 72 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2129637	A	19720105	DE 1971-2129637	19710615 <-
	DE 2129637	C2	19820701		
	GB 1339007	A	19731128	GB 1970-29157	19700616 <-
	ZA 7103228	A	19721227	ZA 1971-3228	19710518 <-
	IL 36990	A1	19761231	IL 1971-36990	19710607 <-
	CA 983478	A1	19760210	CA 1971-115149	19710608 <-
	CS 190359	P	19790531	CS 1971-4190	19710608 <-
	HU 168077	P	19760228	HU 1971-ME1667	19710609 <-
	SE 391525	B	19770221	SE 1971-7459	19710609 <-
	AT 311550	B	19731126	AT 1971-5116	19710614 <-
	AT 320860	B	19750310	AT 1973-2794	19710614 <-
	ES 392227	A1	19750401	ES 1971-392227	19710614 <-
	AT 322738	B	19750610	AT 1971-322738	19710614 <-
	PL 98634	P	19780531	PL 1971-148797	19710614 <-
	SU 460629	D	19750215	SU 1971-1673668	19710615 <-

RO 58733	P	19751115	RO 1971-70720	19710615 <--
RO 58734	P	19760115	RO 1971-70721	19710615 <--
DK 133301	B	19760426	DK 1971-2919	19710615 <--
CH 579572	A	19760915	CH 1971-8752	19710615 <--
RO 61560	P	19770215	RO 1971-67309	19710615 <--
FI 57418	B	19800430	FI 1971-1674	19710615 <--
FI 57418	C	19800811		
NL 7108283	A	19711220	NL 1971-8283	19710616 <--
NL 178876	B	19860102		
NL 178876	C	19860602		
FR 2100768	A5	19720324	FR 1971-21921	19710616 <--
FR 2100768	B1	19741115		
JP 57015117	B4	19820329	JP 1971-43231	19710616 <--
HU 167333	P	19750927	HU 1973-ME1377	19730104 <--
SE 7404874	A	19740410	SE 1974-4874	19740410 <--
ES 419392	A1	19761016	ES 1974-419392	19741005 <--
PRAI GB 1970-29157	A	19700616		
GB 1971-29157	A	19710430		
HU 1971-ME1377	A	19710609		

AB The penicillin derivs. I ($R = \text{MeO, MeOCH}_2, \text{EtO, NH}_2$; $R1 = \text{H, Ph, PhO, 2-furyl, 2-thienyl}$; $R2 = \text{H, NH}_2, \text{CO}_2\text{Na}$; $R3 = \text{H, Na}$) were prepared from benzyl 6-aminopenicillanate. Thus, benzyl 6-aminopenicillanate was diazotized, converted to its azido derivative with $\text{Et}_3\text{N.HN}_3$, and treated with Br-Na_3 to give benzyl 6β -azido-6-bromopenicillanate (II). Treatment of II with MeOH , followed by Ac_2O gave I ($R = \text{MeO, R1 = R2 = H, R3 = CH}_2\text{Ph}$) which was converted to the free acid by hydrogenation over Pd-C and treated with NaHCO_3 to give I ($R = \text{MeO, R1 = R2 = H, R3 = Na}$).

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=> d que
L17      1 SEA FILE=REGISTRY ABB=ON PLU=ON 35353-34-5
L20      9 SEA FILE=CAPLUS ABB=ON PLU=ON L17
L25      8 SEA FILE=CAPLUS ABB=ON PLU=ON L20 AND PY<2004
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L27 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 1996:379879 CAPLUS
 DN 125:56382
 TI Manufacture of beta-lactam antibiotics with microorganisms with increased phenoxyacetyl CoA synthase activity or with the enzyme in vitro
 IN Kaasgaard, Svend; Kristiansen, Claus Nyegaard; Moelgaard, Henrik
 PA Gist-Brocades B.V., Neth.
 SO PCT Int. Appl., 60 pp.
 CODEN: PIXXD2

DT Patent
 LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9610085	A1	19960404	WO 1995-EP3857	19950927
	W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			
CA 2201485	AA	19960404	CA 1995-2201485	19950927
AU 9537440	A1	19960419	AU 1995-37440	19950927
AU 701665	B2	19990204		
EP 783582	A1	19970716	EP 1995-935410	19950927
EP 783582	B1	20050302		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE CN 1162337	19971015	CN 1995-196001	19950927
HU 77042	A2	19980302	HU 1997-1925	19950927
JP 10506287	T2	19980623	JP 1995-511394	19950927
AT 290084	E	20050315	AT 1995-935410	19950927
ES 2236714	T3	20050716	ES 1995-935410	19950927
US 5942411	A	19990824	US 1997-817010	19970619
US 6180360	B1	20010130	US 1999-333645	19990615

PRAI DK 1994-1117 A 19940928
 WO 1995-EP3857 W 19950927

AB The present invention relates to biosynthesis β -lactam antibiotics. More specifically, the invention relates to processes of producing β -lactam antibiotics in vivo and in vitro. Also contemplated is the novel enzyme phenoxyacetyl CoA synthetase. Further, the invention relates to a DNA construct encoding said novel enzyme, a recombinant vector or transformation vehicle comprising said DNA construct, and finally a cell comprising said DNA construct or recombinant vector. The phenoxyacetyl CoA synthetase of *Penicillium chrysogenum* was purified and characterized. The enzyme was used in an in vitro system containing phenoxyacetic acid or phenylacetic acid, CoA, 6-aminopenicillanic acid to prepare penicillin V and penicillin G.

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L27 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
 IC ICM C12N015-52
 ICS C12P035-04; C12P037-04; C12N009-00; C12P017-10; C12P017-14;
 C12N015-80; C12N001-21; C12N001-15
 CC 16-2 (Fermentation and Bioindustrial Chemistry)
 Section cross-reference(s): 3, 7
 ST *Penicillium phenoxyacetyl CoA synthetase purifn characterization; beta lactam antibiotic recombinant microorganism ligase*
 IT Actinomycetes
Aspergillus
Aspergillus nidulans
Bacillus
Bacteria
Cephalosporium
Cephalosporium acremonium
Cercospora
Microspora
Nocardia
Penicillium
Penicillium chrysogenum
Penicillium notatum
Streptomyces
Streptomyces clavuligerus
Streptomyces lactamurans
Temperature effects, biological
 pH (manufacture of β -lactam antibiotics with microorganisms with increased phenoxyacetyl CoA synthase activity or with the enzyme in vitro)
 IT Carboxylic acids, biological studies
 RL: BUU (biological use, unclassified); BIOL (Biological study); USES (Uses)
 (manufacture of β -lactam antibiotics with microorganisms with increased phenoxyacetyl CoA synthase activity or with the enzyme in vitro)
 IT Gene, microbial
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (pcbDE, synchronization of expression of ligase gene and; manufacture of

- β -lactam antibiotics with microorganisms with increased phenoxyacetyl CoA synthase activity or with the enzyme in vitro)**
IT Fungi
 (filamentous, manufacture of β -lactam antibiotics with microorganisms with increased phenoxyacetyl CoA synthase activity or with the enzyme in vitro)
- IT Gene, microbial**
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (pcbAB, synchronization of expression of ligase gene and; manufacture of β -lactam antibiotics with microorganisms with increased phenoxyacetyl CoA synthase activity or with the enzyme in vitro)
- IT Gene, microbial**
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (pcbc, synchronization of expression of ligase gene and; manufacture of β -lactam antibiotics with microorganisms with increased phenoxyacetyl CoA synthase activity or with the enzyme in vitro)
- IT Lactams**
 RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP
 (Preparation)
 (β -, monocyclic, manufacture of β -lactam antibiotics with microorganisms with increased phenoxyacetyl CoA synthase activity or with the enzyme in vitro)
- IT Antibiotics**
 RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP
 (Preparation)
 (β -lactam, manufacture of β -lactam antibiotics with microorganisms with increased phenoxyacetyl CoA synthase activity or with the enzyme in vitro)
- IT** 61-33-6P, Penicillin G, preparation 87-08-1P, Penicillin V 1406-05-9P, Penicillin 10209-11-7P, V-Deacetoxyccephalosporanic acid 11111-12-9P, Cephalosporin 27255-72-7P, G-Deacetoxyccephalosporanic acid 27920-91-8P, Adipoyl-7-aminocephalosporanic acid 63744-80-9P, Cephamicin 76631-42-0P, Nocardicin 80154-48-9P, Adipoyl-7-aminodeacetoxyccephalosporanic acid 178152-49-3P, Isocephalosporin C
 RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP
 (Preparation)
 (manufacture of β -lactam antibiotics with microorganisms with increased phenoxyacetyl CoA synthase activity or with the enzyme in vitro)
- IT** 85-61-0, Coenzyme A, biological studies 103-82-2, Phenylacetic acid, biological studies 122-59-8, Phenoxyacetic acid 124-04-9, Hexanedioic acid, biological studies 142-62-1, Hexanoic acid, biological studies 551-16-6, 6-Aminopenicillanic acid 957-68-6, 7-Aminocephalosporanic acid 1918-77-0, 2-Thiopheneacetic acid 6964-21-2, 3-Thiopheneacetic acid 15690-38-7, 7-Aminodeacetylcephalosporanic acid 22252-43-3, 7-Aminodesacetoxyccephalosporanic acid 54576-90-8 58678-43-6, Isopenicillin N
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES
 (Uses)
 (manufacture of β -lactam antibiotics with microorganisms with increased phenoxyacetyl CoA synthase activity or with the enzyme in vitro)
- IT** 57219-71-3P
 RL: CAT (Catalyst use); PRP (Properties); PUR (Purification or recovery);
 PREP (Preparation); USES (Uses)
 (manufacture of β -lactam antibiotics with microorganisms with increased phenoxyacetyl CoA synthase activity or with the enzyme in vitro)

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L27 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 1996:379879 CAPLUS
 DN 125:56382
 TI Manufacture of beta-lactam antibiotics with microorganisms with increased phenoxyacetyl CoA synthase activity or with the enzyme in vitro
 IN Kaasgaard, Svend; Kristiansen, Claus Nyegaard; Moelgaard, Henrik
 PA Gist-Brocades B.V., Neth.
 SO PCT Int. Appl., 60 pp.
 CODEN: PIXXD2

DT Patent
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9610085	A1	19960404	WO 1995-EP3857	19950927
	W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	CA 2201485	AA	19960404	CA 1995-2201485	19950927
	AU 9537440	A1	19960419	AU 1995-37440	19950927
	AU 701665	B2	19990204		
	EP 783582	A1	19970716	EP 1995-935410	19950927
	EP 783582	B1	20050302		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE CN 1162337	A	19971015	CN 1995-196001	19950927
	HU 77042	A2	19980302	HU 1997-1925	19950927
	JP 10506287	T2	19980623	JP 1995-511394	19950927
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	US 5942411	A	19990824	US 1997-817010	19970619
	US 6180360	B1	20010130	US 1999-333645	19990615
PRAI	DK 1994-1117	A	19940928		
	WO 1995-EP3857	W	19950927		

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L27 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
 IC ICM C12N015-52
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Aspergillus nidulans
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Bacteria
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Cercospora
Microspora
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Penicillium chrysogenum
Penicillium notatum
Streptomyces
Streptomyces clavuligerus
Streptomyces lactamdurans
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 pH (manufacture of β -lactam antibiotics with microorganisms with increased phenoxyacetyl CoA synthase activity or with the enzyme in vitro)
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 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
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 (filamentous, manufacture of β-lactam antibiotics with microorganisms
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 Penicillin 10209-11-7P, V-Deacetoxycephalosporanic acid
 11111-12-9P, Cephalosporin 27255-72-7P, G-Deacetoxycephalosporanic acid
 27920-91-8P, Adipoyl-7-aminocephalosporanic acid 63744-80-9P, Cephamicin
 76631-42-0P, Nocardicin 80154-48-9P, Adipoyl-7-
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 RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP
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 (manufacture of β-lactam antibiotics with microorganisms with increased
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 IT 85-61-0, Coenzyme A, biological studies 103-82-2, Phenylacetic acid,
 biological studies 122-59-8, Phenoxyacetic acid 124-04-9, Hexanedioic
 acid, biological studies 142-62-1, Hexanoic acid, biological studies
 551-16-6, 6-Aminopenicillanic acid 957-68-6, 7-Aminocephalosporanic acid
 1918-77-0, 2-Thiopheneacetic acid 6964-21-2, 3-Thiopheneacetic acid
 15690-38-7, 7-Aminodeacetylcephalosporanic acid 22252-43-3,
 7-Aminodesacetoxycephalosporanic acid 54576-90-8 58678-43-6,
 Isopenicillin N
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES
 (Uses)
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 IT 57219-71-3P
 RL: CAT (Catalyst use); PRP (Properties); PUR (Purification or recovery);
 PREP (Preparation); USES (Uses)
 (manufacture of β-lactam antibiotics with microorganisms with increased
 phenoxyacetyl CoA synthase activity or with the enzyme in vitro)

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L7 7436 SEA FILE=CAPLUS ABB=ON PLU=ON "PROTOPLAST AND SPHEROPLAST"/CT

L8 460 SEA FILE=CAPLUS ABB=ON PLU=ON CEPHALOSPORIUM ACREMONIUM/CT

L9 2264 SEA FILE=CAPLUS ABB=ON PLU=ON PENICILLIUM CHRYSOGENUM/CT

L15 3 SEA FILE=REGISTRY ABB=ON PLU=ON 10209-11-7 OR 35353-34-5 OR
 847567-43-5

L16 1 SEA FILE=REGISTRY ABB=ON PLU=ON L15 AND C18 H20 N2 O6 S/MF

L17 1 SEA FILE=REGISTRY ABB=ON PLU=ON 35353-34-5

L18 1 SEA FILE=REGISTRY ABB=ON PLU=ON L15 NOT (L16 OR L17)

L26 128 SEA FILE=CAPLUS ABB=ON PLU=ON L18

L27 2 SEA FILE=CAPLUS ABB=ON PLU=ON L26 AND (L7 OR L8 OR L9)

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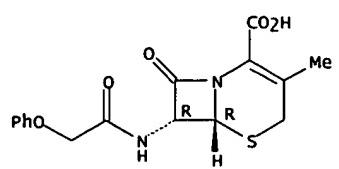
L27 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN

IT 10209-11-7P, Antibiotic M-4
 RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); NPO
 (Natural product occurrence); PRP (Properties); PUR (Purification or
 recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
 (producing novel β-lactam antibiotic from protoplast fusion
 strain)

RN 10209-11-7 CAPLUS

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid,
 3-methyl-8-oxo-7-[(phenoxyacetyl)amino]-, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



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